

Docket No.: LOREAL 3.0-003
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	:
Bertrand Lion	:
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	:
Application No.: 10/735,320	: Group Art Unit: 1615
	:
Filed: December 12, 2003	: Examiner: B. P. Barham
	:
For: DISPERSIONS OF POLYMERS IN:	
SILICONE MEDIUM, AND:	
COMPOSITIONS COMPRISING THEM	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Dear Madam:

I, Bertrand Lion, declare as follows:

1. I am the sole inventor of the invention described in U.S. Patent Application No. 10/735,320, which I refer to as the '320 Application.

2. I am generally familiar with the prosecution of the '320 Application and the position that the Examiner has taken regarding the patentability of my invention, based on Suzuki, et al., U.S. Patent 5,219,560 ("Suzuki") and Torgerson, et al., WO 93/23446 ("Torgerson") as evidenced by Mougin, et al., U.S. Patent 5,851,517 ("Mougin").

3. An inventive polymer dispersion (Specification, Example 5) and a comparative polymer dispersion were made by me or under my general or direct supervision.

4. The inventive polymer dispersion was made as follows: 200 g of heptane, 200 g of decamethylcyclopentasiloxane, 26 g of methyl acrylate, 14 g of monomethacryloxypropylpolydimethylsiloxane macromonomer (MW = 5,000; MCR-M17 (Gelest Inc.)) and 3.2 g of tert-butyl peroxy-2-ethylhexanoate (Trigonox 21S) were placed in a 1 liter reactor. This reaction mixture was stirred and heated to 90°C over 1 hour. After 15 minutes at 90°C, a change was observed in the appearance of the reaction mixture from a transparent appearance to a milky appearance. Heating with stirring was continued for a further 15 minutes. A mixture consisting of 120 g of methyl acrylate, 40 g of acrylic acid, and 2 g of Trigonox 21S was then added dropwise over 1 hour. Heating was then continued for 4 hours at 90°C. The heptane was distilled from the reaction mixture to leave a stable dispersion of polymer particles in decamethylcyclopentasiloxane.

5. The comparative polymer dispersion was made as follows: 200 g of heptane, 200 g of decamethylcyclopentasiloxane, 30 g of methyl acrylate, 10 g of monomethacryloxypropylpolydimethylsiloxane macromonomer (MW = 5,000; MCR-M17 (Gelest Inc.)) and 3.2 g of tert-butyl peroxy-2-ethylhexanoate (Trigonox 21S) were placed in a 1 liter reactor. This reaction mixture was stirred and heated to 90°C over 1 hour. After 15 minutes at 90°C, a change was observed in the appearance of the reaction mixture from a transparent appearance to a milky appearance. Heating with stirring was continued for a further 15 minutes. A mixture consisting of 160 g of methyl acrylate and 2 g of Trigonox 21S was then added dropwise over 1 hour. Heating was then continued for 4 hours at 90°C. The heptane was distilled from the reaction

mixture to leave a stable dispersion of polymer particles in decamethylcyclopentasiloxane.

6. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated:

March 16, 2009

Bertrand Lion

Bertrand Lion

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DECLARATION UNDER 37 C.F.R. § 1.132

Dear Madam:

I, Pascal Arnaud, declare as follows:

1. I am currently employed as a Research Engineer in the Luxury Face Laboratory of the Make-Up Department at L'Oréal SA. I received a diploma from the National Chemistry School of Paris (ENSCP) in 1988, and have been employed with L'Oréal SA since 1989. I have worked in the area of cosmetic foundations for 8 years.

2. The following experiments were conducted by me or under my general or direct supervision. A polymer dispersion of the invention and a comparative polymer dispersion, without a (meth)acrylic acid, were provided to me by Bertrand Lion. (See Declaration under 37 C.F.R. § 1.132 of Bertrand Lion). In the experiments, each of these dispersions was then incorporated into a separate cosmetic

foundation composition and the color transfer of the two foundations was compared.

3. Cosmetic foundation compositions as shown in Table 1 were prepared.

Ingredient	Inventive Formulation (% wt)	Comparative Formulation (% wt)
ABEL EM 97 (85/15 blend of α,ω -substituted, ethoxylated propoxylated silicone/cyclomethicone) (Goldschmidt Co.)	1.8	1.8
IMWITOR 780 K (mono- and diglycerides of isostearic acid esterified with succinic acid) (Sasol Co.)	0.6	0.6
Isododecane	22.10	22.10
Cyclopentasiloxane	7.9	7.9
Inventive Polymer Dispersion	4.20	--
Comparative Polymer Dispersion	--	4.15
Pigments	10	10
Silicone gum (MIRASIL C (Rhodia)) ⁸	3	3
Nylon powder (ORGASOL 2002 (Atofina))	8	8
Preservative	Qs	Qs
Magnesium sulfate	0.7	0.7
Water	Qsp 100	Qsp 100

Table 1. Cosmetic foundation compositions.

4. Accordingly, the comparison of these two foundation compositions is a direct comparison of an inventive composition to a comparative polymer dispersion, without a (meth)acrylic acid.

5. The transfer index of each of the foundation compositions was measure as follows: A substrate consisting of a 40 mm x 40 mm square of a layer of neoprene foam with adhesive on one face (RE70X40. 212B (Joint

Technique Lyonnais Ind.) was prepared. An adhesive crown having an internal diameter of 24 mm and a thickness of approximately 250 μm was affixed to the non-adhesive face of the substrate. The cosmetic foundation composition was applied inside the crown and was leveled off with a glass slide to form a deposit of having a thickness of approximately 250 μm . The crown was removed and the deposit dried in an oven at 37°C for 20 hours.

6. The substrate was then affixed by its adhesive face to an end piece having a diameter of 27 mm that was then fixed on a press (STATIF MANUEL SV-1 (Imada Co. Ltd.)) equipped with a dynamometer (DPS-5R (Imada Co. Ltd.)). A box having a length of 21 cm and width of 4 cm was drawn on a piece of photo-quality coated paper (Epson S041061, 102 g/m²). This paper strip was divided along its length into 5 boxes having a length of 4.2 cm and a width of 4 cm. The paper strip was then placed on the bed of the press.

7. A 10 μl drop of artificial sebum (Table 2) was deposited at the center of the first box on the strip:

Ingredient	%
Triolein	29
Oleic Acid	28.5
Oleyl Oleate	18.5
Squalene	14
Cholesterol	7
Cholesteryl Palmitate	3

Table 2. Artificial sebum.

The substrate with the cosmetic foundation composition was then pressed onto the first box of the paper strip with a force of about 4 kg for 5 seconds. The paper strip was then displaced in a regular, rectilinear fashion, at a speed of

about 10 cm/s, over the entire length of the strip, such that the substrate was brought into contact with the entire length of the paper strip.

8. The trail of cosmetic foundation composition deposited on the paper strip was then visually observed and scored for transfer index. Transfer index is a measure of the likelihood of a composition to transfer from the substrate to which it is applied to another substrate. A lower transfer index grade equates to a lower susceptibility to transfer. In effect, a composition, such as a cosmetic foundation, with a low transfer index will exhibit very little transfer from the skin to which it is applied to, for example, clothing contacting the skin.

9. A transfer index grade from 0.5 to 5 in increments of 0.5 was awarded for each composition as a measure of the number of boxes on the paper strip, from first to fifth, which were crossed, partly or completely, by the trail of the cosmetic foundation composition. A transfer index grade of 5 would be awarded when there is substantially no product (i.e., less than 10%) remaining on the substrate or if the trail of the product extends beyond the fifth box on the paper strip. In this case, the transfer of the composition may be considered total. A transfer index grade of 0 would be awarded if none of the composition is transferred to the paper strip (i.e., no visible trail can be observed on the paper strip).

10. Intermediate transfer index grades would be awarded based on the scale in Table 3:

Box Number at which the trail of the composition ends	Grade	
	Trail crosses more than half the box	Trail crosses up to half the box
5	4.5	
		4
4	3.5	
		3
3	2.5	
		2
2	1.5	
		1
1	0.5	

Table 3. Transfer index grade scale.

11. When scored as described above, the cosmetic foundation composition containing the inventive polymer particle dispersion was awarded a transfer index grade of 0.5. The cosmetic foundation composition containing the comparative polymer particle dispersion was awarded a transfer index grade of 3.5. This represents a 7-fold increase in transfer resistance.

12. Based on my knowledge and experience in the field of cosmetic foundations, I believe that a person of ordinary skill in the art would not have expected that a cosmetic composition containing a dispersion of a polymer with a skeleton containing a C₁-C₃ (meth)acrylate and acrylic acid and/or methacrylic acid, as claimed, would exhibit an increase in transfer resistance over a polymer without acrylic acid or methacrylic acid. Thus, in my opinion, the result obtained, which in this case was a 7-fold increase in transfer resistance, was unexpected.

13. I hereby declare that all statements made herein of my own knowledge are true and that all statements made

on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 03/16/09

Pascal ARNAUD

Pascal Arnaud